Message

From: Verhalen, Frances [verhalen.frances@epa.gov]
Sent: 2/8/2021 10:42:08 PM
To: Robinson, Jeffrey [Robinson.Jeffrey@epa.gov]; Casso, Ruben [Casso.Ruben@epa.gov]
Subject: FW: Denka modeling discussion
Attachments: Denka Network Assessment.pptx; Comparison of Modeled and Observed 2016-18.pptx

Is this what you are looking for with respect to modeling?

Frances Verhalen, P.E., Chief
Air Monitoring & Grants Section
US Environmental Protection Agency
1200 Elm Street, Suite 500 (MC 6ARPM)
Dallas, TX 75270
214-665-2172
verhalen.frances@epa.gov

-----Original Appointment-----
From: Imhoff, Robert <imhoff.robert@epa.gov>
Sent: Friday, June 19, 2020 1:29 PM
To: Verhalen, Frances
Cc: Casso, Ruben; Diem, Art; Imhoff, Robert; Shappley, Ned; Smith, Darcie; Palma, Ted; Feldman, Michael
Subject: Accepted: Denka modeling discussion
When: Tuesday, June 23, 2020 11:00 AM-12:00 PM (UTC-06:00) Central Time (US & Canada).
Where: Microsoft Teams Meeting

Frances,

I've attached a couple of additional presentations that may help address the representativeness of the SPOD monitoring relative to the Community monitoring.

- Denka Network Assessment.pptx looks at the community monitoring site locations' suitability as SPOD sampling locations
    - Angles to sources
    - Relative concentrations
    - Location map with modeled isopleths
    - Sites ranked by their likelihood of detecting events and for their ability to distinguish individual sources
- Comparison of Modeled and Observed 2016-18 shows statistical analysis of the observed and modeled concentration frequency distributions and performs a rough mass balance estimate for the relative emission rates from known routine emissions, unknown routine emissions, and episodic emissions.
    - The statistical analysis finds that about 2/3 of the dose after the installation of the RTO comes from 10% of the days (a perfect SPOD system could capture most of the dose with much less sampling)
    - Because of the deviation of the frequency distribution from log-normal, the analysis indicates that significant episodic emissions were detected on about 10% of the sampled days.
    - The mass balance indicates that the daily emission rate during episodic emissions is about 4X the modeled post-RTO emission rate.
    - The model vs observation analysis finds that
        - > 80% of the modeled dose occurs during the nighttime hours
        - Comparison with monitored distribution indicates that about ½ of the days have impacts from sources not included in the modeling, with 10% of the days having more than ½ of the daily maximum concentration due to unknown sources.

-Best regards,

Bob